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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,538	12/28/2000	Stephen S. Ohr	H0001609(4960)	1429

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Honeywell International Inc.  
Law Dept. AB2  
P.O. Box 2245  
101 Columbia Road  
Morristown, NJ 07962.

EXAMINER

CUNEO, KAMAND

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 02/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/752,538

Applicant(s)

OHR, STEPHEN S.

Examiner

Ishwar B Patel

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-9, drawn to a sub-lamination layer, classified in class 174, subclass 262.
  - II. Claims 10-18, drawn to a method of producing a sublamination layer, classified in class 29, subclass 830.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions group II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as the step of applying a photoactive resist is not required in the product. Further instead of etching other known process can be used.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with David Zoetewey (45,258) on January 29, 2002 a provisional election was made without traverse to prosecute the invention of a sublamination layer, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-18 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Drawings***

5. The drawings are objected to because the figures are improperly cross hatched. All the parts shown in section, and only those parts, must be cross hatched. The cross hatching patterns should be selected from those shown on page 600-81 of the MPEP based on the material of the part. See also 37 CFR 1.84(h)(3) and MPEP 608.02.

6. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Wiley (US Patent 4,854,038).

Regarding claim 1, Wiley discloses a sublamination layer, comprising:

a single layer etched reference plane having a top surface and a bottom surface  
(a copper sheet 2, see figure 1-4, column 3, line 20-40);

a first signal layer coupled to the top surface with a first bond-ply material (signal pattern 8 formed of copper sheet 4 and 5 bonded with bond film 6, see figure 3-4, column 3, line 20-40);

a second signal layer coupled to the bottom surface with a second bond-ply material (signal pattern 8 formed of copper sheet 4 and 5 bonded with bond film 6, see figure 3-4, column 3, line 20-40); and

at least one of a through via (via 13, see figure 4, column 3, line 20-40).

Regarding claim 2, Wiley further discloses the reference plane comprises a metal  
(a copper sheet 2, see figure 1-4, column 3, line 20-40).

Regarding claim 3, Wiley further discloses the metal is copper (a copper sheet 2, see figure 1-4, column 3, line 20-40).

Regarding claim 4, Wiley further discloses the bond – ply material comprise the same material (bonding film 6, see figure 3-4, column 3, line 20-30).

Regarding claim 6-8, Wiley further disclosing the sublamination as a printed circuit board and two or more of such sublamination used for other component as shown in figure 5 and 6.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Wiley (US Patent 4,854,038) as applied to claim 1 above.

Regarding claim 6, though Wiley does not explicitly disclose the bond-ply material as FR-4, Wiley does disclose bonding film made of resin. Further FR-4 is known in the art and used as a low cost dielectric insulating material. Therefore, it would

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have been obvious to one having ordinary skill in the art at the time the invention was made to supply the assembly of Wiley with the bond-ply material made of FR-4 in order to have the sublamination layer with desired characteristic with the reduced cost.

Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 7, though Wiley does not explicitly disclose the first and second bond-ply material do not comprise the same material. However, selecting the material for the insulating material will depend upon various factors such as the degree of the insulation required, the co-efficient of thermal expansion based on the vicinity to the component and the thickness allowed to get the above characteristics. Further, various bonding materials are known in the art and can be selected to get the desired thermal expansion value and insulation between the layers. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to supply the assembly of Wiley with the first and second bond-ply material not comprising the same material in order to get required insulation and expansion co-efficient value with lowest possible thickness to keep the final product small and economical. Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

**Conclusion**

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hani et al., Petefish, Bindra et al, Duffy et al., Chang, Oboodi et al., disclose the circuit board similar to applicants claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar B Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (6:30 - 4) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave L Talbott can be reached on (703) 308 9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

ibp  
February 18, 2002



K. Kumar  
Primary Examiner